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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/610,305	07/05/2000	TOSHIMICHI HARADA	106656	4202

7590 12/17/2001

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EXAMINER

NGUYEN, KIMBERLY T

ART UNIT	PAPER NUMBER
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1774

DATE MAILED: 12/17/2001

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/610,305

Applicant(s)

HARADA ET AL.

Examiner

Kimberly T. Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-24 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3.

- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakamura, U.S. Pat. No. 6,210,794 B1 in view of Coleman, U.S. Pat. No. 5,741,387.

Nakamura shows a thermal transfer sheet comprising a substrate (base material), a release layer (peel layer), and a coloring layer (ink layer) (Abstract). Nakamura shows that the coloring layer comprises coloring agent (coloring component) and binder such as styrene resin and ethylene-vinyl acetate copolymer (binder component) (column 4, lines 6-35). Nakamura further shows that the release layer comprises a wax, such as candelilla wax, which has a melting point of 50 to 85°C (column 5, lines 19-34).

Nakamura does not show that the ethylene-vinyl acetate copolymer has a melt index of from 3 to 1,000 as in instant claims 4-6.

Coleman shows an image transfer sheet comprising a backing sheet, a heat release sheet, and an ink design layer (Abstract). Coleman shows that the heat release layer comprises ethylene-vinyl acetate copolymers having a melt index of from 5 to 46.5 (column 4, lines 52-56). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use an ethylene-vinyl acetate copolymer having a melt index of from 5 to 46.5 in a

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thermal transfer recording medium because it is known that such melt indices would be optimal for a thermal transfer medium's transferring property, wear resistance, and heat resistance.

Though Nakamura shows that the coloring layer comprises coloring agent and binder such as styrene resin and ethylene-vinyl acetate copolymer (binder component) (column 4, lines 6-35), Nakamura does not show that a styrene resin and an ethylene-vinyl acetate copolymer are in a weight ratio of from 10:90 to 50:50 as in instant claims 7-12. It would have been obvious to one of ordinary skill in the art to use styrene resin and an ethylene-vinyl acetate copolymer in a weight ratio of from 10:90 to 50:50 because such resins are known in the art as binders for coloring agents in thermal transfer mediums. Further, where the general conditions of a claim are disclosed by the prior art (i.e. amount of resins), it is not inventive to discover the optimum or workable ranges by routine experimentation.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kimberly Nguyen whose telephone number is (703) 308-8176. The examiner can normally be reached on Monday to Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cynthia H. Kelly can be reached on (703) 308-0449. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-5408 for all communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

CYNTHIA H. KELLY
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700

